

Amendments to the Claims

Please cancel Claims 103, 109 and 122. Please amend Claims 24, 32, 107, 135, 143, 152 and 153. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

- 1-23. (Canceled)
24. (Currently amended) A fusion protein comprising a naturally occurring primate MAdCAM, wherein said naturally occurring primate MAdCAM binds $\alpha 4\beta 7$ integrin and has at least ~~about 55% amino~~ about 75% amino acid sequence similarity to an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4 and SEQ ID NO:6.
25. (Previously presented) The fusion protein of Claim 24, comprising a first moiety and a second moiety, wherein said first moiety is a naturally occurring primate MAdCAM and said second moiety is at least a portion of an immunoglobulin chain.
26. (Original) The fusion protein of Claim 25, wherein said first moiety is joined at its C-terminal end to the N-terminal end of the second moiety.
27. (Canceled)
28. (Previously presented) The fusion protein of Claim 25, wherein the second moiety is at least a portion of an immunoglobulin heavy chain constant region.
29. (Original) The fusion protein of Claim 28, wherein the immunoglobulin heavy chain is of the IgG class.

30. (Original) The fusion protein of Claim 28, wherein the second moiety comprises hinge, CH2 and CH3 domains of an immunoglobulin heavy chain.
31. (Original) A hybrid immunoglobulin comprising a fusion protein of Claim 25.
32. (Currently amended) [[A]] The hybrid immunoglobulin ~~comprising a fusion protein~~ of Claim 31, wherein said hybrid immunoglobulin is a homodimer.
- 33-100. (Canceled)
101. (Withdrawn) The fusion protein of Claim 24, comprising a first moiety and a second moiety, wherein said first moiety is a naturally occurring primate MAdCAM and said second moiety is at least a portion of a mutant immunoglobulin chain, said mutant having reduced binding affinity for Fc receptor and/or complement relative to wild type immunoglobulin.
- 102-104. (Canceled)
105. (Previously presented) The fusion protein of Claim 24 wherein said primate MAdCAM is encoded by SEQ ID NO:1, SEQ ID NO:3 or SEQ ID NO:5 or a nucleic acid that shares at least about 75% nucleotide sequence similarity with SEQ ID NO:1, SEQ ID NO:3 or SEQ ID NO:5.
106. (Previously presented) The fusion protein of Claim 24 wherein said primate MAdCAM is encoded by SEQ ID NO:1, SEQ ID NO:3 or SEQ ID NO:5 or a nucleic acid that shares at least about 90% nucleotide sequence similarity with SEQ ID NO:1, SEQ ID NO:3 or SEQ ID NO:5.
107. (Currently amended) A fusion protein comprising an $\alpha 4\beta 7$ integrin-binding fragment of a naturally occurring primate MAdCAM, wherein said primate MAdCAM has at least ~~about 55% amino~~ about 75% amino acid sequence similarity to an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4 and SEQ ID NO:6,

and said $\alpha 4\beta 7$ integrin-binding fragment comprises the N-terminal immunoglobulin-like domain of said primate MAdCAM.

108. (Previously presented) The fusion protein of Claim 107 wherein said $\alpha 4\beta 7$ integrin-binding fragment is selected from the group consisting of a fragment comprising the entire extracellular domain of primate MAdCAM and a fragment comprising the two N-terminal immunoglobulin domains of primate MAdCAM.
- 109-110. (Canceled)
111. (Previously presented) A hybrid immunoglobulin comprising a fusion protein of Claim 107.
112. (Previously presented) The hybrid immunoglobulin of Claim 111, wherein said hybrid immunoglobulin is a homodimer.
113. (Previously presented) A fusion protein comprising a naturally occurring human MAdCAM, wherein said naturally occurring human MAdCAM binds $\alpha 4\beta 7$ integrin and has at least about 75% amino acid sequence similarity to SEQ ID NO:2 or SEQ ID NO:4.
114. (Canceled)
115. (Previously presented) The fusion protein of Claim 113 wherein said human MAdCAM is encoded by SEQ ID NO:1, SEQ ID NO:3 or a nucleic acid that shares at least about 75% nucleotide sequence similarity with SEQ ID NO:1 or SEQ ID NO:3.
116. (Previously presented) The fusion protein of Claim 113 wherein said human MAdCAM is encoded by SEQ ID NO:1, SEQ ID NO:3 or a nucleic acid that shares at least about 90% nucleotide sequence similarity with SEQ ID NO:1 or SEQ ID NO:3.
117. (Withdrawn) The fusion protein of Claim 116, comprising a first moiety and a second moiety, wherein said first moiety is a human MAdCAM and said second moiety is at least

a portion of a mutant immunoglobulin chain, said mutant having reduced binding affinity for Fc receptor and/or complement relative to wild type immunoglobulin.

118. (Previously presented) A hybrid immunoglobulin comprising a fusion protein of Claim 113.
119. (Previously presented) The hybrid immunoglobulin of Claim 118, wherein said hybrid immunoglobulin is a homodimer.
120. (Previously presented) A fusion protein comprising an $\alpha 4\beta 7$ integrin-binding fragment of a naturally occurring human MAdCAM, wherein said naturally occurring human MAdCAM binds $\alpha 4\beta 7$ integrin and has at least about 75% amino acid sequence similarity to SEQ ID NO:2 or SEQ ID NO:4, and said $\alpha 4\beta 7$ integrin-binding fragment comprises the two N-terminal immunoglobulin-like domains of said human MAdCAM.
121. (Previously presented) The fusion protein of Claim 120, wherein said $\alpha 4\beta 7$ integrin-binding fragment is selected from the group consisting of a fragment comprising the entire extracellular domain of human MAdCAM and a fragment comprising the two N-terminal immunoglobulin domains of human MAdCAM.
- 122-123. (Canceled)
124. (Previously presented) A hybrid immunoglobulin comprising a fusion protein of Claim 120.
125. (Previously presented) The hybrid immunoglobulin of Claim 124, wherein said hybrid immunoglobulin is a homodimer.
126. (Previously presented) A fusion protein comprising a primate MAdCAM moiety, wherein said primate MAdCAM moiety has binding affinity for $\alpha 4\beta 7$ integrin and comprises an amino acid sequence selected from the group consisting of SEQ ID NO:2 and the amino acid sequence of an $\alpha 4\beta 7$ integrin-binding portion of the polypeptide shown in Figure 1

- (SEQ ID NO:2), wherein said $\alpha 4\beta 7$ integrin-binding portion comprises the N-terminal immunoglobulin-like domain.
127. (Previously presented) The fusion protein of Claim 126 wherein said $\alpha 4\beta 7$ integrin-binding portion is a mature protein.
128. (Previously presented) The fusion protein of Claim 126 wherein said $\alpha 4\beta 7$ integrin-binding portion is the complete extracellular domain of the polypeptide shown in Figure 1 (SEQ ID NO:2).
129. (Previously presented) The fusion protein of Claim 126 wherein said $\alpha 4\beta 7$ integrin-binding portion consists of the two amino-terminal immunoglobulin domains of the polypeptide shown in Figure 1 (SEQ ID NO:2).
130. (Previously presented) The fusion protein of Claim 126 further comprising a second moiety, wherein said second moiety is at least a portion of an immunoglobulin chain.
131. (Previously presented) A fusion protein comprising a primate MAdCAM moiety, wherein said primate MAdCAM moiety has binding affinity for $\alpha 4\beta 7$ integrin and comprises an amino acid sequence selected from the group consisting of SEQ ID NO:4 and the amino acid sequence of an $\alpha 4\beta 7$ integrin-binding portion of the polypeptide shown in Figure 2 (SEQ ID NO:4), wherein said $\alpha 4\beta 7$ integrin-binding portion comprises the N-terminal immunoglobulin-like domain.
132. (Previously presented) The fusion protein of Claim 131 wherein said $\alpha 4\beta 7$ integrin-binding portion is a mature protein.
133. (Previously presented) The fusion protein of Claim 131 wherein said $\alpha 4\beta 7$ integrin-binding portion consists of the complete extracellular domain of the polypeptide shown in Figure 2 (SEQ ID NO:4).

134. (Previously presented) The fusion protein of Claim 131 wherein said $\alpha 4\beta 7$ integrin-binding portion is the two amino-terminal immunoglobulin domains of the polypeptide shown in Figure 2 (SEQ ID NO:4).
135. (Currently amended) The fusion protein of Claim 131 further comprising a second moiety, wherein said second moiety is at least a portion of an immunoglobulin chain ~~or immunoglobulin chain~~.
136. (Previously presented) A fusion protein comprising a naturally occurring primate MAdCAM, wherein said naturally occurring primate MAdCAM binds $\alpha 4\beta 7$ integrin and has at least about 90% amino acid sequence similarity to an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4 and SEQ ID NO:6.
137. (Previously presented) The fusion protein of Claim 136, comprising a first moiety and a second moiety, wherein said first moiety is the naturally occurring primate MAdCAM and said second moiety is at least a portion of an immunoglobulin chain.
138. (Previously presented) The fusion protein of Claim 137, wherein said first moiety is joined at its C-terminal end to the N-terminal end of the second moiety.
139. (Previously presented) The fusion protein of Claim 137, wherein the second moiety is at least a portion of an immunoglobulin heavy chain constant region.
140. (Previously presented) The fusion protein of Claim 139, wherein the immunoglobulin heavy chain is of the IgG class.
141. (Previously presented) The fusion protein of Claim 139, wherein the second moiety comprises hinge, CH2 and CH3 domains of an immunoglobulin heavy chain.
142. (Previously presented) A hybrid immunoglobulin comprising a fusion protein of Claim 137.

143. (Currently amended) [[A]] The hybrid immunoglobulin ~~comprising a fusion protein~~ of Claim 142, wherein said hybrid immunoglobulin is a homodimer.
144. (Previously presented) The fusion protein of Claim 136 wherein said primate MAdCAM is encoded by SEQ ID NO:1, SEQ ID NO:3 or SEQ ID NO:5 or a nucleic acid that shares at least about 90% nucleotide sequence similarity with SEQ ID NO:1, SEQ ID NO:3 or SEQ ID NO:5.
145. (Previously presented) A fusion protein comprising an $\alpha 4\beta 7$ integrin-binding fragment of a naturally occurring primate MAdCAM, wherein said naturally occurring primate MAdCAM has at least about 90% amino acid sequence similarity to SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6, and said $\alpha 4\beta 7$ integrin-binding fragment comprises at least one immunoglobulin-like domain of said primate MAdCAM.
146. (Previously presented) The fusion protein of Claim 145, wherein said $\alpha 4\beta 7$ integrin-binding fragment is selected from the group consisting of a fragment comprising the extracellular domain of said naturally occurring primate MAdCAM and a fragment comprising the two N-terminal immunoglobulin domains of said naturally occurring primate MAdCAM.
147. (Previously presented) A hybrid immunoglobulin comprising a fusion protein of Claim 145.
148. (Previously presented) The hybrid immunoglobulin of Claim 147, wherein said hybrid immunoglobulin is a homodimer.
149. (Previously presented) A fusion protein comprising a naturally occurring human MAdCAM, wherein said naturally occurring human MAdCAM binds $\alpha 4\beta 7$ integrin and has at least about 90% amino acid sequence similarity to SEQ ID NO:2 or SEQ ID NO:4.

150. (Previously presented) The fusion protein of Claim 149 wherein said human MAdCAM is encoded by SEQ ID NO:1, SEQ ID NO:3 or a nucleic acid that shares at least about 90% nucleotide sequence similarity with SEQ ID NO:1 or SEQ ID NO:3.
151. (Withdrawn) The fusion protein of Claim 149, comprising a first moiety and a second moiety, wherein said first moiety is a human MAdCAM and said second moiety is at least a portion of a mutant immunoglobulin chain, said mutant having reduced binding affinity for Fc receptor and/or complement relative to wild type immunoglobulin.
152. (Currently amended) A hybrid immunoglobulin comprising a fusion protein of Claim [[113]] 149.
153. (Currently amended) The hybrid immunoglobulin of Claim [[118]] 152, wherein said hybrid immunoglobulin is a homodimer.
154. (Previously presented) A fusion protein comprising an $\alpha 4\beta 7$ integrin-binding fragment of a naturally occurring human MAdCAM, wherein said naturally occurring human MAdCAM binds $\alpha 4\beta 7$ integrin and has at least about 90% amino acid sequence similarity to SEQ ID NO:2 or SEQ ID NO:4, and said $\alpha 4\beta 7$ integrin-binding fragment comprises the two N-terminal immunoglobulin-like domains of said human MAdCAM.
155. (Previously presented) A hybrid immunoglobulin comprising a fusion protein of Claim 154.
156. (Previously presented) The hybrid immunoglobulin of Claim 155, wherein said hybrid immunoglobulin is a homodimer.
157. (Previously presented) A fusion protein comprising a primate MAdCAM or $\alpha 4\beta 7$ integrin-binding fragment thereof, wherein said primate MAdCAM binds $\alpha 4\beta 7$ integrin and has at least about 90% amino acid sequence similarity to an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, and said $\alpha 4\beta 7$

integrin-binding fragment comprises at least one immunoglobulin-like domain of said primate MAdCAM.

158. (Previously presented) The fusion protein of Claim 157, wherein said primate MAdCAM binds $\alpha 4\beta 7$ integrin and has at least about 90% amino acid sequence similarity to SEQ ID NO:2.
159. (Previously presented) The fusion protein of Claim 157, wherein said primate MAdCAM binds $\alpha 4\beta 7$ integrin and has at least about 90% amino acid sequence similarity to SEQ ID NO:4.
160. (Previously presented) The fusion protein of Claim 157, wherein said $\alpha 4\beta 7$ integrin-binding fragment is selected from the group consisting of a fragment comprising the extracellular domain of said primate MAdCAM and a fragment comprising the two N-terminal immunoglobulin domains of said primate MAdCAM.